

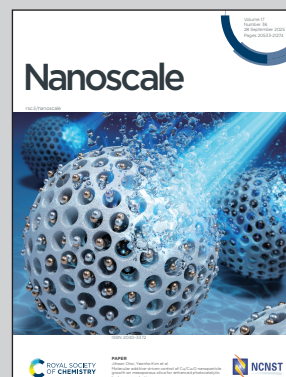
**Showcasing research from Prof. Wei-Ming Sun's group,
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A theoretical study on doping Pd-like superatoms into defective graphene quantum dots: an efficient strategy to design single superatom catalysts for the Suzuki reaction

NbN@GQD, a novel graphene quantum dot (GQD)-supported single superatom catalyst was designed and investigated and exhibits excellent stability and satisfactory catalytic activity for Suzuki reaction. Increasing the number of $-\text{NO}_2$ groups at the edge of GQD leads to a progressive improvement in catalytic activity; the fully substituted NbN@GQD- $(\text{NO}_2)_{16}$ catalyst achieves performance comparable to that of Pd@GQD catalyst, providing efficient means to achieving promising alternatives to traditional Pd-based SACs for C-C coupling reactions based on the superatom concept.

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See Wei-Ming Sun *et al.*, *Nanoscale*, 2025, **17**, 20924.